

REMARKS

The above amendments to the above-captioned application along with the following remarks are being submitted as a full and complete response to the Office Action dated November 15, 2007. In view of the above current claims and the following remarks, the Examiner is respectfully requested to give due reconsideration to this application, to indicate the allowability of the claims, and to pass this case to issue.

Status of the Claims

As outlined above, claims 1-2 stand for consideration in this application. Any amendments to the application submitted herewith are fully supported therein. Applicants hereby submit that no new matter is being introduced into the application through the submission of this response.

Prior Art Rejections

The Examiner rejected claims 1-2 under 35 U.S.C. §102(b) as being anticipated by Zare et al. (US Patent No. 4,675,300). Applicants have reviewed the above-outlined prior art rejection and hereby respectfully traverse.

The present invention as recited in claim 1 is directed to an electrophoresis apparatus comprising: a plurality of capillaries; a voltage applier applying voltage between both ends of the capillaries; a laser light source irradiating a laser; and a fluorescent detector detecting a fluorescence emitted from inside of the capillaries, wherein each of the plurality of capillaries comprises a first region coated with a polymer, a second region having a surface of the capillary exposed for a predetermined length in the longitudinal direction, and a third region defined between the first and second regions and covered with a tapered polymer coating with a thickness that becomes thinner from the first region to the second region. A slope of the surface of the coating of the third region makes an angle of 70 degrees or less from the first region to the second region relative to the longitudinal direction of the capillary.

Among the features of the present invention, each capillary has first, second and third regions with the third region being between the first and second regions and covered with a tapered polymer coating as recited in claim 1 hereinabove and as illustrated in Figure 10B. This structure has the advantage of preventing stresses from concentrating on the glass tube of the capillary tube at the edge of the coating when the capillary tube is bent after the windows are processed, thereby solving the problem of easy breakage caused by a

concentration of stresses at the edge of the coating upon bending the capillary tube. Further, the tapered coating serves like a cable holder for connectors or grommets used for electric wiring (see page 21, lines 1-11).

In contrast to the present invention, the reference of Zare '300 merely shows a fused-silica capillary 30 that has an opaque polyimide protective coating 31 on its outer surface that is removed with flame in order to produce a translucent section 32 (see col. 3, lines 32-37). Otherwise, Zare '300 does not provide any disclosure, teaching or suggestion as to the structure of the capillary 30.

Specifically, the structure of Zare '300 is nothing more than the conventional structure discussed in the present application on, for example, page 20, lines 4-9 and illustrated in Figure 10C, and thus embodies the deficiency in the prior art that the present invention is directed to solving. In particular, the structure of Zare '300 suffers from easy breakage caused by the concentration of stresses at the edge of the coating when the capillary tube is bent. This is evidenced by additional experiments described in the Supplemental Declaration of Inventor under 37 C.F.R. §1.132. Applicant contend that the supplemental declaration prepared by one of the inventors, Mr. Kumio Harada, sets forth that the further experimental data illustrate the deficiencies inherent in the structure of Zare '300, and consequently in the prior art as a whole, all in accordance with the Examiner's requirements. Applicants respectfully request the Examiner's reconsideration in this regard.

Because the prior art structures suffer from easy breakage caused by the concentration of stresses at the edge of the coating when the capillary tube is bent, Applicants contend that the edges of the coating in the prior art devices are, for example, unfit to serve as cable holder portions, as in the present invention. The concentration of stresses already present by virtue of how the edge of the coating is made (i.e., by heat or flame) combined with the potential stress of cable holder elements (i.e., connectors or grommets) being attached thereto, would make the prior art capillary tube at the edge of the coating even more prone to breakage and defects. One of skill in the art thus would not look to the prior art or to the teachings of Zare '300 for a structure having all the features and advantages of the present invention as claimed.

To make the assertion of obviousness, Applicants contend that the Examiner at best would have to rely on hindsight knowledge of the present invention as claimed as a guide for attributing the features of the present invention to Zare '300. It is well established that each prior art reference must be evaluated as an entirety, and that all of the prior art must be considered as a whole," *Panduit Corp. v. Dennison Mfg. Co.*, 227 USPQ 337, 344 (Fed. Cir.

1985). See *Para-Ordinance Mfg, Inc. v. SGS Importers Intl., Inc.*, 73 F.3d 1085, 37 USPQ2d 1237 (Fed. Cir. 1995) (“Obviousness may not be established using hindsight or in view of the teachings or suggestions of the inventor.”). Thus, the Examiner’s reliance on Zare ‘300 for either anticipating or rendering obvious the features of the present invention is improper and thus groundless.

In view of all the above, Applicants contend that the deficiencies of Zare ‘300 results in that reference failing to embody any structure that includes, among other features, a first region where it is coated with a polymer, a second region where a surface of the capillary being exposed for a predetermined length in the longitudinal direction, and a third region provided between the first and second regions, covered with a tapered polymer coating whose thickness becomes thinner from the first region to the second region, wherein a slope of the surface of the coating of the third region makes an angle of 70 degrees or less with the longitudinal direction of the capillary, as in the present invention as claimed. Rather, because the polyimide coating 31 is removed conventionally by flame, the resulting structure is at best the same as the conventional structure illustrated in Figure 10C of the present application, with all the deficiencies commensurate therewith.

As such, Zare ‘300 cannot by itself anticipate each and every feature nor the combination of features of the present invention as claimed. The present invention as a whole is distinguishable and thereby allowable over Zare ‘300.

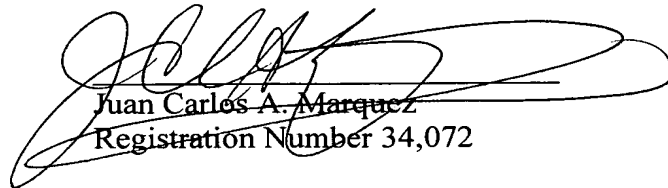
Conclusion

In view of all the above, Applicants respectfully submit that certain clear and distinct differences as discussed exist between the present invention as now claimed and the prior art references upon which the rejections in the Office Action rely. These differences are more than sufficient that the present invention as now claimed would not have been anticipated nor rendered obvious given the prior art. Rather, the present invention as a whole is distinguishable, and thereby allowable over the prior art.

Favorable reconsideration of this application as amended is respectfully solicited. Should there be any outstanding issues requiring discussion that would further the prosecution and allowance of the above-captioned application, the Examiner is invited to contact the Applicants' undersigned representative at the address and phone number indicated below.

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